

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: **TBD**

Region: Fayetteville Regional Office
County: Bladen
NC Facility ID: 0900043
Inspector's Name: Joshua L. Harris
Date of Last Inspection: 01/06/2016
Compliance Code: 3 / Compliance - inspection

Facility Data Applicant (Facility's Name): North Carolina Renewable Power – Elizabethtown, LLC Facility Address: North Carolina Renewable Power - Elizabethtown, LLC 3100 West Broad Street Elizabethtown, NC 28337 SIC: 4911 / Electric Services NAICS: 221112 / Fossil Fuel Electric Power Generation Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V				Permit Applicability (this application only) SIP: 02D: .0501, .0503, .0504, .0515, .0516, .0521, .0530, .0614, .1100, .1111 02Q: .0317, .0400, .0711 NSPS: n/a NESHAP: ZZZZ (4Z), JJJJJ (6J) PSD: PM, SO ₂ , NO _x , CO PSD Avoidance: n/a NC Toxics: 02D .1100, 02Q .0711 112(r): n/a Other: Senate Bill 3, Acid Rain Permit, Cross State Air Pollution Rule, HAP-Major Avoidance			
Contact Data				Application Data Application Numbers: 0900043.16B & .16C Dates Received: 04/04/2016 (B) & 08/08/2016 (C) Application Types: Renewal (B) & Acid Rain (C) Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 05455/T21 Existing Permit Issue Date: 03/28/2016 Existing Permit Expiration Date: 12/31/2016			
Facility Contact Steven Ingle Vice President - Engineering (205) 545-8759 2100 Southbridge Parkway, Suite 540 Birmingham, AL 35209	Authorized Contact Steven Ingle Vice President - Engineering (205) 545-8759 2100 Southbridge Parkway, Suite 540 Birmingham, AL 35209	Technical Contact Steven Ingle Vice President - Engineering (205) 545-8759 2100 Southbridge Parkway, Suite 540 Birmingham, AL 35209					
Total Actual emissions in TONS/YEAR:							
CY	SO ₂	NO _x	VOC	CO	PM ₁₀	Total HAP	Largest HAP
2015	---	---	---	---	---	---	.00E+00 [Antimony & Compounds (total ma)]
2014	---	---	---	---	---	---	.00E+00 [Antimony & Compounds (total ma)]
2013	---	0.0500	0.3100	0.0100	---	4.12E-05	1.15E-05 [Formaldehyde]
2012	---	0.0600	0.3100	0.0100	---	5.04E-05	1.39E-05 [Formaldehyde]
2011	---	0.0500	0.3100	0.0100	---	4.92E-05	1.37E-05 [Formaldehyde]
Review Engineer: Russell Braswell Review Engineer's Signature: _____ Date: _____				Comments / Recommendations: Issue 05455/T22 Permit Issue Date: TBD Permit Expiration Date: TBD			

1. Purpose of Application:

- .16B

North Carolina Renewable Power – Elizabethtown, LLC (NCRP – Elizabethtown) currently operates an electric generating facility in Elizabethtown, Bladen County under Title V Air Quality Permit 05455T21. This permit is set to expire on December 31, 2016. NCRP – Elizabethtown submitted this permit application in order to renew the permit. Because the renewal application was received at least nine months before the expiration date of the permit, the current permit will remain in effect, regardless of the expiration date, until this permit application is approved or denied.

- .16C

NCRP – Elizabethtown has been issued a Title IV Acid Rain Permit under 40 CFR Part 72. This application was submitted in order to renew that permit.

2. Facility Description:

"Previously known as Elizabethtown Power, LLC, the facility is an old coal burning power plant, which houses two boilers and is permitted to combust myriad fuels. The facility will likely undergo modification similar to that performed at its sister plant in Lumberton, Robeson County (Facility ID 7800166), to allow the boilers to burn primarily non-CISWI wood fuel, with some percentage of poultry litter to produce steam for energy production."¹

In addition, the facility has not operated since 2009.

3. History/Background Since the Previous Permit Renewal:

- January 24, 2012 Permit T16 issued. This action renewed the Title V and Title IV permits.
- May 8, 2012 Permit T17 issued. This was a PSD-Major permit that allowed the boilers to burn wood. This also added requirements under 02D .1100, made changes to fuel handling systems, and made changes to control devices.
- August 16, 2014 Permit T18 issued. This action changed the name on the permit.
- October 13, 2014 Permit T19 issued. This action changed the name on the permit.
- February 2, 2015 Permit T20 issued. This action changed the facility owner and name on the permit.
- March 28, 2016 Permit T21 issued. This was a "reopen for cause" permit modification that addressed the expiration of the Clean Air Interstate Rule and the addition of the Cross State Air Pollution Rule.

4. Application Chronology:

- April 4, 2016 Application .16B received.

1 From Joshua Harris's inspection report dated January 12, 2016.

- July 26, 2016 Email sent to Steven Ingle requesting that NCRP – Elizabethtown submit an Acid Rain Permit renewal application.
- August 8, 2016 Application .16C received.
- August 17, 2016 Email sent to Farhana Momin² regarding boiler classification under MACT Subpart JJJJJ and potential TAP exemption under Session Law 2012-91.
- September 29 – October 3, 2016 Internal discussions regarding Session Law 2012-91. Ultimately, it was concluded that TAP exemption should not be pursued.
- October 4, 2016 An initial draft of the permit and review were sent to DAQ staff (Tom Anderson, Mark Cuilla, Samir Parekh, Greg Reeves, Joshua Harris), NCRP staff (Steven Ingle), and EPS staff (Frank Burbach, Farhana Momin). For a summary of comments received, see Attachment 2.

• XXXXXX Public / EPA notice

• XXXXXX Permit issued.

5. Permit Modifications/Changes and TVEE Discussion:

The list of changes to the permit can be found in Attachment 1.

6. Regulatory Review:

NCRP - Elizabethtown is subject to the following regulations, in addition to the requirements in the General Conditions:

- 15A NCAC 02D .0501 "Compliance with National Air Quality Standards"
- 15A NCAC 02D .0503 "Particulates from Fuel Burning Indirect Heat Exchangers"
- 15A NCAC 02D .0504 "Particulates from Wood Burning Indirect Heat Exchangers"
- 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
- 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"
- 15A NCAC 02D .0521 "Control of Visible Emissions"
- 15A NCAC 02D .0530 "Prevention of Significant Deterioration"
- 15A NCAC 02D .0614 "Compliance Assurance Monitoring"
- 15A NCAC 02D .1100 "Control of Toxic Air Pollutants"
- 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (40 CFR Part 63, Subparts ZZZZ, JJJJJ)
- 15A NCAC 02Q .0317 "Avoidance Conditions" (HAP-Major Avoidance)
- 15A NCAC 02Q .0400 "Acid Rain Procedures"
- 15A NCAC 02Q .0711 "Emission Rates Requiring a Permit"
- NCGA Senate Bill 3 (aka Session Law 2007-397)
- Cross State Air Pollution Rule (40 CFR Part 92, Subparts AAAAA,BBBBB, and CCCCC)

An extensive review for each applicable regulation is not included in this document, as the facility's status with respect to these regulations has not changed. The permit will be updated to reflect the most current stipulations for all applicable regulations.

2 Staff engineer working for EPS Environmental Planning, a consulting firm employed by NCRP - Elizabethtown.

7. Requirements under CFR Title 40:

a. New Source Performance Standards (NSPS)

1. Subpart Db "Industrial-Commercial-Institutional Steam Generating Units"

According to 60.40b(a), this rule applies to boilers that commenced construction or reconstruction after June 19, 1984. NCRP - Elizabethtown was built one month prior to this date³.

The boilers were allowed to burn wood when the T17 permit was issued. According to the T17 permit review⁴, "Burning of wood does not result in a 'modification' of the boilers, in the context of Section 60.14. In addition, these boilers do not meet the requirements of Section 60.15 'reconstruction'."

Therefore, the boilers are not subject to this rule.

2. Subpart IIII "Stationary Compression Ignition Internal Combustion Engines"

According to 60.4200(a), this rule applies to engines that are constructed or reconstructed after July 11, 2005. The emergency engine has been at the facility since at least 2001, so this rule does not apply.

b. Maximum / Generally Available Control Technology (MACT/GACT)

NCRP – Elizabethtown is avoiding being considered a Major Source of HAP by limiting facility-wide HAP emissions to less than 10 tons of any individual HAP and 25 tons of total combined HAP. As long as NCRP – Elizabethtown abides by this limit, the facility will be considered an Area Source of HAP.

1. Subpart ZZZZ "Stationary Reciprocating Internal Combustion Engines"

This rule applies to all stationary engines. The rule has different requirements based on the manufacture date, size, nature, and major source status of the engine.

For emergency use engines located at area sources, the general requirements are:

- Minimize time spent during startup, shutdown, and idle;
- Perform regular maintenance on filters, belts, and hoses;
- Use good combustion practices;
- Only operate for emergency, maintenance, or testing purposes;
- Install a non-resettable hour meter; and
- Use ultra-low sulfur diesel fuel (40 CFR 80.510(b))

Records of maintenance activities must be kept and reported regularly.

3 See Rhonda Hall's inspection report, dated July 31, 2001.

4 Written by Rahul Thaker, issued May 8, 2012

2. *Subpart DDDDD "Industrial, Commercial, and Institutional Boilers and Process Heaters"*

According to 40 CFR 63.7485, this rule applies to boilers located at major sources of HAPs. Because NCRP – Elizabethtown is avoiding being considered a major source, this rule does not apply.

2. *Subpart UUUUU "Coal- and Oil-Fired Electric Utility Steam Generating Units"*

According to 40 CFR 63.9982(a)(1), this rule applies to coal and oil-fired boilers as defined in 63.10042. In order to be considered a coal-fired boiler, at least 10% of the heat input to the boiler must be derived from coal.

Although the facility is permitted to burn coal in the boilers, NCRP – Elizabethtown plans to burn only biomass once the unit is brought online.⁵ Therefore, the boilers do not meet the definition of coal-fired, and this rule does not apply.

3. *Subpart JJJJJ "Industrial, Commercial, and Institutional Boilers Area Sources"*

This rule applies to boilers located at area sources of HAPs. The rule has several different subcategories based on the size and fuel type of the boiler. Because NCRP – Elizabethtown plans to burn only biomass, the boilers will be considered biomass boilers (despite being capable of burning coal, oil, and other fuels).

For biomass boilers of the size used at NCRP – Elizabethtown, the general requirements are:

- Use good combustion practices;
- Conduct an initial, one-time energy assessment; and
- Conduct a tune-up every two years

Records of tune-ups and other maintenance activities must be kept and reported regularly.

c. Prevention of Significant Deterioration (PSD)

NCRP – Elizabethtown has previously triggered a PSD review. As a result of this review, the boilers have BACT emission limits for PM, SO₂, NO_x, and CO (and separate limits for CO and H₂SO₄ while burning wood). In order to demonstrate compliance with the emission limits, the facility must monitor SO₂ and NO_x using CEMS and perform regular maintenance on the bagfilters.

Once the facility resumes operating, one of the boilers must be tested for CO and H₂SO₄ emissions while burning wood.

d. Section 112(r) of the Clean Air Act

The facility has a storage tank for aqueous ammonia, but in the T17 permit application, NCRP – Elizabethtown specified that it would store 19% (or less) aqueous ammonia. Section 112(r) only applies to aqueous ammonia with a concentration of 20% or greater.

5 Based on an email sent by Frank Burbach, working for EPS Environmental Planning.

The facility does not appear to store any 112(r)-subject materials above their respective thresholds. Therefore, the facility does not have any increased requirements under Section 112(r) of the Clean Air Act.

e. Reasonably Available Control Technology (RACT)

The facility is not located in an area of ozone nonattainment, therefore RACT does not apply.

f. Compliance Assurance Monitoring (CAM)

CAM applies to a control device if the following criteria are met:

1. The unit being controlled is subject to a non-exempt emission standard (as defined by 02D .0614(b)(1)),
2. The control device is being used to comply with the emission standard, and
3. The unit being controlled has potential emissions of the pollutant subject to the emission standard of greater than major source thresholds.

NCRP – Elizabethtown uses control devices to comply with emission limits for NO_x, SO₂, and PM. CEMS are used for NO_x and SO₂, which is considered a continuous compliance determination method per 02D .0614(b)(1)(F) and are therefore exempt from CAM. However, there is no such exemption for PM emissions and associated control devices. Therefore, CAM applies to the PM control devices.

NCRP – Elizabethtown has submitted a CAM plan to address PM emissions. The plan uses opacity as the indicator, and uses continuous opacity monitors (COMs) to monitor opacity. The plan lays out the maximum opacity and criteria for excursions. Records of COMs readings must be kept and reported regularly.

8. Toxic Air Pollutants (TAPs)

NCRP – Elizabethtown is subject to two separate TAP emission rules; 02D .1100 and 02Q .0711.

a. 02D .1100

NCRP – Elizabethtown performed TAP dispersion modeling with the T17 permit. The modeling demonstrated compliance with all applicable acceptable ambient limits (AALs) for four sources: the two boilers, the emergency generator, and the ammonia storage tank. The only operating restriction necessary to demonstrate compliance is a 1,000 hour operating limit on the emergency generator. The modeled emission rates were incorporated into the permit as emission limits. No reporting is required to demonstrate compliance with 02D .1100.

b. 02Q .0711

In addition to the modeling performed for 02D .1100, NCRP – Elizabethtown demonstrated that modeling was not required for several more TAPs, because the emission rates of these pollutants were lower than their respective TPERs listed in 02Q .0711.

Part of this demonstration was based on assumptions about the nature and amount of specific fuels to be used in the boiler (e.g. less than 40% tire-derived fuel, only fire certain fuels during "high fire" periods). These assumptions were incorporated into the permit as permit conditions associated with

02Q .0711. Records must be kept that demonstrate compliance with all of the fuel restrictions, and records must be reported regularly.

c. Session Law 2012-91

On June 28, 2012, the NC Legislature passed Session Law 2012-91. This law states that emission sources subject to rules under 40 CFR Part 63 can be exempt from TAP emission limits, provided that such an exemption does not "present an unacceptable risk to human health". The boilers and the generator are both subject to 40 CFR Part 63, so both are potentially eligible.

The permit includes several restrictions on the types and amount of alternate fuels that can be fired in the boilers. Without these restrictions, it is not clear that NCRP – Elizabethtown could comply with all AALs, so it cannot be determined that an exemption from TAP requirements would not present an unacceptable risk. Therefore, it is not possible to remove these restrictions at this time. The Permittee has been notified of this conclusion and has withdrawn his request for their removal.

9. Acid Rain Permit

NCRP – Elizabethtown has been issued an Acid Rain Permit (ARP), which generally contains emission limits for SO₂ and NO_x emitted from electric generating utilities. However, there are no specific emission limits for the boilers at this facility because there were no SO₂ allocations assigned to the boilers.

In general, compliance with the ARP is determined by USEPA, not NCDAQ. The Title V permit contains a reference to the ARP, but no specific conditions.

10. Facility Emissions Review

The facility has not operated since 2009, so reported emissions since that date are not representative of the facility's potential emissions.

11. Compliance Status

a. Notices of Violation/Recommendation for Enforcement since the previous renewal

None.

b. Inspection status

The facility was most recently inspected by Joshua Harris on January 12, 2016. The facility was not operating at the time of that inspection, but still appeared to be in compliance with the Title V permit.

12. Other Regulatory Concerns

A PE seal was not required for this permit renewal.

A zoning consistency form was not required for this permit renewal.

13. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 2Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above.

14. Recommendations

Issue permit 05455T22.

DRAFT

Change List

Pages*	Section*	Description of Changes
Throughout	Throughout	<ul style="list-style-type: none"> Updated permit dates/application numbers Fixed typos Updated formatting
n/a	Insignificant Activities List	<ul style="list-style-type: none"> Removed roads from this list because roads are generally not included in the insignificant activities.
3	Permitted Emission Source List	<ul style="list-style-type: none"> Added callout for GACT Subparts ZZZZ and JJJJJ Added note regarding concentration of ammonia stored in ES-15
	2.1 A.	<ul style="list-style-type: none"> Renumbered conditions in this section to match order of appearance in NCAC
	2.1 A.4.	<ul style="list-style-type: none"> Linked monitoring/recordkeeping/reporting requirements of 02D .0503 and .0504 because they were identical.
	2.1 A.9	<ul style="list-style-type: none"> Removed provision for updating emission factors/limits through administrative amendment. This process must be completed with a regular application for permit modification.
	2.1 A.10.	<ul style="list-style-type: none"> Moved CSAPR requirements to this section.
	2.1 E.3.	<ul style="list-style-type: none"> Added full requirements for MACT Subpart ZZZZ
	2.2 A.2.	<ul style="list-style-type: none"> Removed provision for updating emission factors/limits through administrative amendment. This process can be completed by attaching the testing approval memo to this permit. Changed equations to more clearly indicate emission factors and heating values.
	2.2 B.	<ul style="list-style-type: none"> Added Section 2.2 B. Added permit condition for submitting a 2nd step application per 02Q .0501(c)(2).

* This refers to the current permit unless otherwise stated.

Comments Received on Initial Draft

- Mark Cuilla, by email on October 11, 2016

1. Mark pointed out typos and formatting errors in the permit and review.

Response: Fixed.

2. Mark suggested that Section 2.2 A.2. be updated to reflect DAQ's recent decision to incorporate new emission factors by attaching test results to the permit. Previously, the permit required a new permit application be submitted in order to incorporate new factors.

Response: I have made this change.

- Josh Harris, by email on October 25, 2016

1. Mark pointed out that the mailing address for Steven Ingle (the authorized contact) needed to be updated.

Response: Fixed.

DRAFT